SOME *STREPTOCARPUS* SPECIES FROM THE EASTERN CAPE PROVINCE.

By L. L. Britten.

In July 1936 some Streptocarpus plants were collected near Port St. John's in a damp, shady spot like those so often populated by *S. Rexii* (Hook.) Lindl. in many of the kloofs of the Eastern Province. These plants, except for the deep red colour of the undersides of their leaves, were indistinguishable from that species, but a few yards away a plant in flower was found, the flower much like those of *S. polyanthus* Hook. f. so that it was clearly a distinct species. These plants all bloomed freely in cultivation in Grahamstown the following summer. More specimens were secured from the same locality a year later and again only one flower was discovered, evidently the last of the season.

The plants have proved easy to cultivate and very free-blooming, producing sprays of graceful mauve flowers for several months. The red colour of the leaves disappeared as the weather became warmer and reappeared again in winter. Many strains of *S. Rexii* from different districts, among them one from Port St. John's, have been grown with them but in none of these has such reddening of the leaves been observed. In the kloofs near Grahamstown where *S. Rexii* grows in myriads only rarely is this deep coloration seen and then apparently it is the result of injury, though plants in somewhat exposed positions may be tinged with red in winter.[1]

The new species increases fairly rapidly by vegetative means, new leaves which become centres of rosette formation arising at intervals on some of the roots that spread near the surface of the ground. Such adventitious sprouting of leaves on roots occurs also in some strains of *S. Rexii*, *e.g.* in some plants collected above the Kei Cutting on the Butterworth road and in some from the Willowvale District, but it does not appear to be universal. The writer has collected and cultivated for a great many years other specimens of this species which have not shown this phenomenon. The name given, *S. Johannis*, is appropriate as there is little doubt that the specimen collected near the same spot over forty years ago by the late Dr. H. Bolus belongs to this species. It is curious that such a conspicuous thing should not have been collected oftener.

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[1] Since these notes were written plants of both *S. Rexii* and *S. Johannis* with red undersides to their leaves in summer have been obtained, so that the distinction referred to above is not significant.

The extreme similarity of the vegetative parts to the rosulate *S. Rexii* and the general resemblance of the flowers to *S. polyanthus* with its single leaf emphasise the artificiality of dividing *Eustreptocarpus* into *Unifoliati* and *Rosulati*, as B. L. Burtt has already pointed out.[1] Typical *S. polyanthus* has not been reported from the same locality but a unifoliate species with tiny flowers of much the same general pattern does occur (collected by Dr. S. Schönland (4097), by Dr. J. Hewitt in 1936 and by the writer (6602) in the following year). Hybridization experiments are being carried out to see if they throw any light on the relationships.

The resemblance to *S. polyanthus* was seen by reference to the literature and herbarium material. The writer has not seen typical living specimens of that species but has collected and grown a number of the so-called unifoliate forms, such as *S. gracilis* B. L. Burtt. It may be noted that in some of these the term unifoliate is convenient since there is but one chief photosynthetic leaf which bears the inflorescences. This at first is the cotyledonary leaf, but after flowering the blade dies away and a new leaf sprouts out from the base of the cotyledon or from the hypocotyl (which at this stage is not distinguishable to the eye from the petiole). It is thus not possible from a superficial inspection to see whether the single leaf is the original cotyledon or a new structure developed subsequently. In some cases, *e.g.* in *S. Daviesii* N. E. Brown, secondary growths develop early while the first blade is still fresh and active so that one sees leaves superimposed. It sometimes happens that in addition other blades may be developed so that there appear to be several large-leaved plants growing together.[2] Some of the unifoliate species are monocarpic and normally die after flowering and seeding, but others are perennial.

Such facts as these, in addition to the occasional development of the second cotyledon, are important; but it is not clear yet how much weight should be given to vegetative features, though it is difficult to avoid the conclusion that both flowers and leaves must be considered when trying to decide about affinities.

The problem is all the more interesting as there is yet another species, described below as *S. Baudertii*, which has flowers very similar to those of *S. Johannis* but which has vegetative parts much like those of *S. Meyeri*, B. L. Burtt (*parviflorus* E. Mey). On the other hand there are several species which have vegetative parts resembling *S. Rexii* and whose flowers are built in a way that suggests relationship with the latter. One of these is the pretty little plant described in this paper as *S. modestus*, which may perhaps help to link *S. Rexii* with *S. parviflorus* Hook. f. (*S. luteus* of the Flora Capensis) from the Transvaal Woodbush and with some plants of the Zoutpansberg collected by Mr. L. R. Vogts. *S. modestus* grows in humous soil in the forest and thus resembles in its requirements both *S. Rexii* and *S. parviflorus* Hook. f.

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[1] B. L. Burtt; Kew Bulletin, 1936, 1939.

[2] *Cf.* F. Oehlkers; Zeitschrift für Botanik, 32, 327 (1938).

The plant described below as *S. montigena* is one of those which grow in rock crevices facing South or East so that their leaves are exposed to full sunshine for part of the day. In habit it resembles *S. Meyeri* which also grows at the foot of rocks of this aspect.

It is obvious that much field work and laboratory work remains to be done and that the comparisons made above have little value, but they are given because of the difficulty of describing differences seen in living plants but lost in herbarium specimens.

Streptocarpus Johannis, L. L. Britten, sp. nov.

Planta S. Rexii similis sed floribus numerosis tubo graciliore curvato facile distinguitur ; fortasse *S. polyantho* affinis.

Herba acaulis, multifoliata. *Folia* oblonga, obtusa ad 30 cm. longa, 6 cm. lata, saepe petiolata, crenata, utrinque pubescentia, nervis subtus prominentibus, nonnulla serie inflorescentias multifloras ferentia. *Pedunculi* saepe ad 15 cm. longi, vel longiores, pubescentes. *Bracteae* 5 mm. longae. *Pedicelli* 5—10 mm. longi. *Calyx* 5 mm. longus, pubescens, ad basin 5-partitus ; segmenta linearia. *Corolla* coeruleo-lilacina, extus breviter glanduloso-pubescens, tubo gracili c. 18 mm. leviter constricto, in medio arcuato, fauce alba, hirsuta ; limbo bilabiato, obliquo c. 3 cm. lato ; lobis obtusis ; labio inferiore trilobo, 1·8 cm. longo, basi albo-maculato, et lineis purpureis leviter reticulato ; labio superiore bilobo levissime lineato. *Stamina* 2, corollae inserta, antheris cohaerentibus, filamentis 2 mm. longis, versus basin pubescentibus ; *staminodia* minuta. *Ovarium stylusque* fere glabra, c. 7 mm. longa ; stigma bilobum, lobis lateralibus. *Discus* annularis. *Fructus* c. 5 cm. longus.

Hab. Pondoland : Port St. John's, on loose humous soil in forest and on damp, shady banks, July 1936, *L. L. Britten* 6554, type, Albany Museum Herbarium. *H. Bolus* 10240, prope Insinuka ad ostium fluv. St. John's alt. 100′ Feb. 1896, seems identical.

Plants with flowers larger than those described have been obtained in cultivation and the shape of the limb differs somewhat in different specimens. In some the lobes are broader, in others narrower ; in some the limb is flat, almost rotate, in others the two posterior lobes bend back along the sides of the tube. In some the limb is held horizontally,

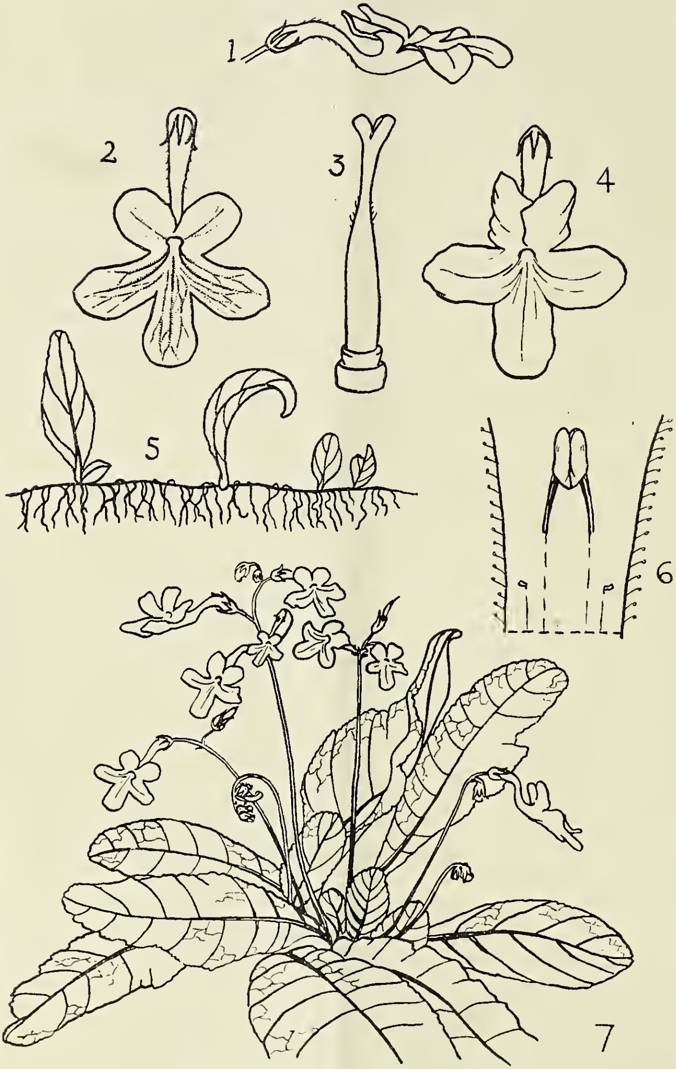

Fig. 1. *Streptocarpus Johannis.* 1 and 2. Flowers nat. size. 3. Gynaecium and disc × 3. 4. Flower, form with posterior petals bent back, nat. size. 5. Roots and adventitious leaves, nat. size. 6. Part of corolla with stamens and staminodes × 3. 7. Plant × about $\frac{3}{8}$.

in others obliquely. The colour is light lavender violet (R.C.S.)[1] in some, but the shades vary. There is also variation in the pencilling on the corolla ; generally the lines are rather blurred and in one strain there is a touch of yellow at the throat.

S. Baudertii, L. L. Britten, sp. nov.

Affinis *S. Johannis*, sed stigmatis lobis medianis et foliis *S. Meyeri* B. L. Burtt similibus.

Herba acaulis, rosulata, prostrata. *Folia* ad 12 cm. longa, 4 cm. lata, oblonga, obtusa, crenulata, bullata undique pubescentia, subtus nervis prominentibus ; nonnulla inflorescentias glanduloso-pubescentes ferentia. *Pedunculi* c. 15 cm. longi parvis bracteis et 2—6 floribus coeruleo-lilacinis 4·5 cm. longis. *Pedicelli* 6 mm. longi. *Calyx* ad basin 5-partitus, 6 mm. longus, segmentis linearibus. *Corollae* tubus c. 22 mm. longus, curvus, pubescens, limbus obliquus, bilabiatus, lobis obtusis. *Stamina* 2, corollae inserta, antheris cohaerentibus, filamentis purpureis c. 3 mm. longis ; *staminodia* minuta. *Ovarium stylusque* c. 9 mm. longa, glanduloso-pubescentia ; stigma bilobum, lobis medianis. *Capsula* 3·5 cm. longa.

Hab. Griqualand East and Transkei : Mvenyani, Cedarville. Common on the sides of rocks in moist places. 27 May, 1921, *E. Baudert* 187, type, Albany Museum Herbarium.

This species is named after Mr. E. Baudert who collected it in 1921 and who last year sent the writer's request for living specimens to Mr. W. O. Sonnenburg of Cedarville. The latter very kindly sent some plants which flowered in the summer, and stated that they " seem to favour steep slopes protected from the direct sun rays and within reach of the spray from a waterfall." The description was made from Mr. Baudert's pressed material and these living plants.

With these may be considered some very small plants sent last winter by Mr. G. W. Reynolds (2849) which he found on a krantz overlooking the Xobo River, about sixteen miles east of Idutywa. The leaves grew larger in the warmer weather but this winter they have died back and are more or less dormant as small rosettes. Though their flowers had more lines on the corolla these plants are sufficiently like the Cedarville ones to warrant their inclusion in *S. Baudertii*.

The flowers in all these are light lavender violet or Bradley's violet (R.C.S.). Though the flowers of *S. Baudertii* are very like those of *S. Johannis* in shape, the stigma lobes are in the median plane, as is usual in bicarpellary Tubiflorae, but in *S. Johannis* they are held laterally.

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[1] Ridgway. Color Standards and Color Nomenclature.

The front lip is proportionately longer but in *S. Johannis* there are several strains in which the lip is longer than in others and this may also prove to be the case in *S. Baudertii.*

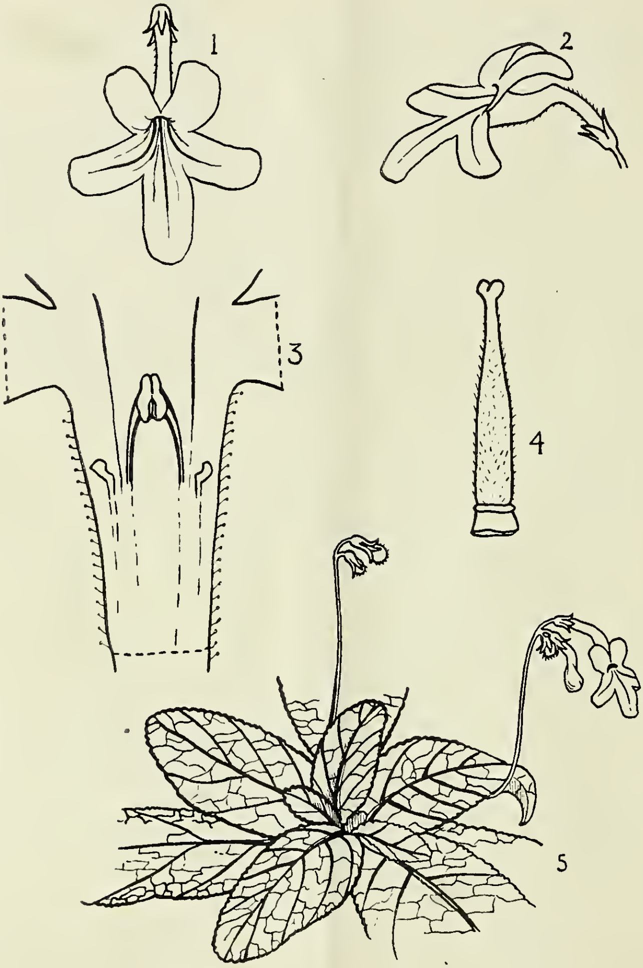

Fig. 2. *Streptocarpus Baudertii.* 1 and 2. Flowers a little less than nat. size. 3. Part of corolla with stamens and staminodes × 3. 4. Gynaecium and disc × 3. 5. Plant × about $\frac{3}{8}$.

To *S. Baudertii* may also be assigned the specimen collected by H. Bolus at Chwenka in 1896 (Bolus Herbarium 8769) "in saxosis inter Maclear et Umtata, alt. 3,700′" which was referred by C. B. Clarke to *S. hirtinervis.* (Flora Capensis IV sect. 2). This specimen does not agree with his description, which he said was drawn chiefly from Nyasaland examples. The writer has not yet seen these Nyasaland specimens but B. L. Burtt states[1] that they have a saccate corolla base and he excludes the Chwenka specimen, suggesting that it may be *S. polyanthus*, but it matches the Cedarville plants very well. (Chwenka appears on modern maps as Ntywenka.)

S. montigena, L. L. Britten, sp. nova.

Fortasse *S. Rexii* affinis sed corollae tubo curvato, foliis glanduloso-pubescentibus adpressis distinguitur.

Herba acaulescens, compacta, rosulata, prostrata. *Folia* ad 15 cm. longa, 10 c.m. lata, ovata, bullata, crenata, undique valde longis pilis simplicibus et glanduliferis pubescentia, praesertim subtus, nervis subtus prominentibus. *Inflorescentiae* ex nonnullis foliis, ad 17 cm. longae, pluriflorae. *Bracteae* parvae. *Pedicelli* 8 mm. longi, ut *pedunculi* glanduloso pubescentes. *Flores* 4—5 cm. longi. *Calyx* 5 mm. longus, fere ad basin 5-partitus, segmentis, linearibus, glanduloso-pubescentibus. *Corolla* pallide lilacina, fauce flava, tubo infundibuliforme arcuato, lobis rotundatis. *Stamina* 2, corollae inserta, antheris cohaerentibus, filamentis c. 6 mm. longis. *Staminodia* 2, 3 mm longa. *Discus* annularis. *Ovarium stylusque* dense glandulosa 2—2·5 cm. long. *Stigma* ovale. *Capsula* c. 5 cm. longa.

Hab. Stockenstroom Division : Top of Katberg Pass, on rocky krantz in rock crevices. Flower upper half mauve, lower cream. January, 1930, *R.A. Dyer* 2310. Katberg Pass, 5,500 feet, in crevices and on narrow ledges of krantzes facing East or South East, 18th March, 1934, *L.L. Britten,* type. Both in Albany Museum Herbarium.

This pretty species, which makes a good pot-plant, was discovered by Dr. Dyer and some of his specimens were cultivated with great success in Grahamstown by Miss G. Blackbeard. The writer was directed to its haunts and found it flowering in March, 1934, and in full flower in February last year in precipitous places, often where it is happily out of reach and safe from unscrupulous collectors.

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[1] *Loc. cit.* It may be noted, however, that the sheet in the Bolus Herbarium is marked "Typus Auctoris," but as Clarke two years later in the Flora of Tropical Africa does not quote the Chwenka specimen it seems likely that these words were written on the sheet merely because of the reference to it in Flora Capensis. In that case the application of the name *S. hirtinervis* to the Nyasaland plants appears legitimate.

Apart from their flowers the plants have much the same appearance as *S. Meyeri*, with rather thick leaves in the form of a neat, flat rosette, but they are at once distinguished by the long, gland-tipped hairs which occur in great abundance on the under side and which are found in smaller

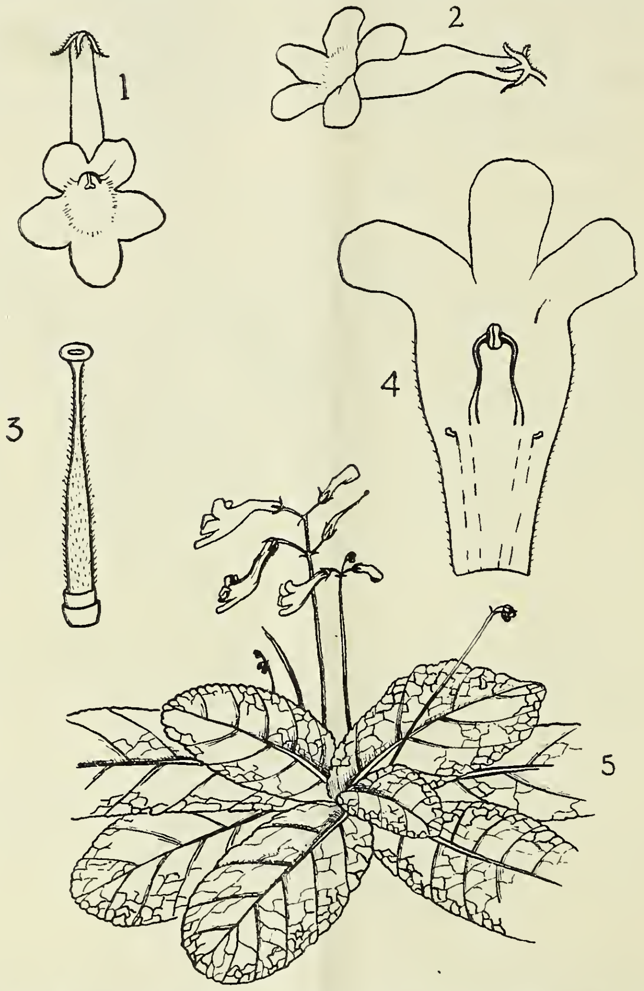

Fig. 3. *Streptocarpus montigena.* 1 and 2. Flowers × ¾. 3. Gynaecium and disc × 1½. 4. Part of corolla with stamens and staminodes × 1½. 5. Plant × about ½.

numbers also on the upper side, in addition to the long white multicellular hairs such as occur in all the above described species. In them too there are glands on the leaves, but they are microscopically small and almost sessile.

S. modestus, L. L. Britten, sp. nov.

Planta similis *S. Rexii* sed undique minor, distinguitur corollae tubo curvato breviore ; fortasse *S. parvifloro* Hook. f. affinis.

Herba acaulis multifoliata. *Folia* ad 10 cm. longa, 4 cm. lata, oblonga, obtusa, crenata, rugosa, undique pubescentia, nervis subtus prominentibus. *Inflorescentiae* biflorae, ad 7 ·5 cm. longae. *Pedunculi* ut *pedicelli* pubescentes. *Bracteae* minutae ; pedicelli 1 ·4 cm. longi. *Flores* 2 ·5 cm. longi. *Calyx* fere ad basin 5-partitus. *Corolla* extus restricte pubescens, coeruleo-lilacina, tubo dilatato, sursum levissime curvato, intus purpureo-lineato ; limbo bilabiato, lobis orbicularibus, antico labio albo-maculato. *Stamina* corollae inserta, antheris cohaerentibus, purpureis filamentis, 4 mm. longis. *Ovarium* pubescens 5 mm longum. *Stylus* purpureus 6 mm., laete glandulosus. *Stigma* ovale. *Capsula* c. 4 cm. longa.

Hab. Pondoland : Magwa Falls near Lusikisiki, growing in shallow, humous soil on a rock, sheltered under bush on forest margin ; July 1936, *L.L. Britten* 6549 (type), Albany Museum Herbarium.

The plants were somewhat wilted and not in flower but bloomed in each succeeding summer, the inflorescences bearing two flowers. It is possible that when more specimens are collected some will show more flowers, for in both *S. Rexii* and *S. Gardeni* Hook. f., which characteristically have biflorate inflorescences, five- or six-flowered ones are frequently found. The leaves in *S. modestus* are slightly more hairy than in *S. Rexii*, having a texture very similar to those in *S. parviflorus* Hook. f. and as the flowers are shaped much as in the latter it may be this little plant should be considered a variety of *S. parviflorus*.

The leaves of all the four species described above have a more or less puffy appearance due to the depression of the leaf surface over the chief veins through greater growth of the intervening tissue but it is less marked in *S. Johannis* than in the others. They all show the tendency, well known in *Eustreptocarpus*, for the older leaves to die off at the tips, the basal portion remaining green and enlarging on the return of warmer weather, this being more marked in those that are exposed to greater ranges of temperature. The distal portion may be cut off by a definite zone of cuticularized cells.

The writer wishes to acknowledge the kindly interest and help of Miss I. Verdoorn and Mr. A. J. Barratt and to express her thanks to Mrs. Bolus for the loan of material from the Bolus Herbarium, to Dr. J. Hewitt

for facilities at the Albany Museum, to Dr. E. P. Phillips for lending the material in the National Herbarium, Pretoria, to Mr. McLean for sheets from the Natal Herbarium, and to many friends for specimens. The illustrations for these notes were done by Miss G. A. Carr.

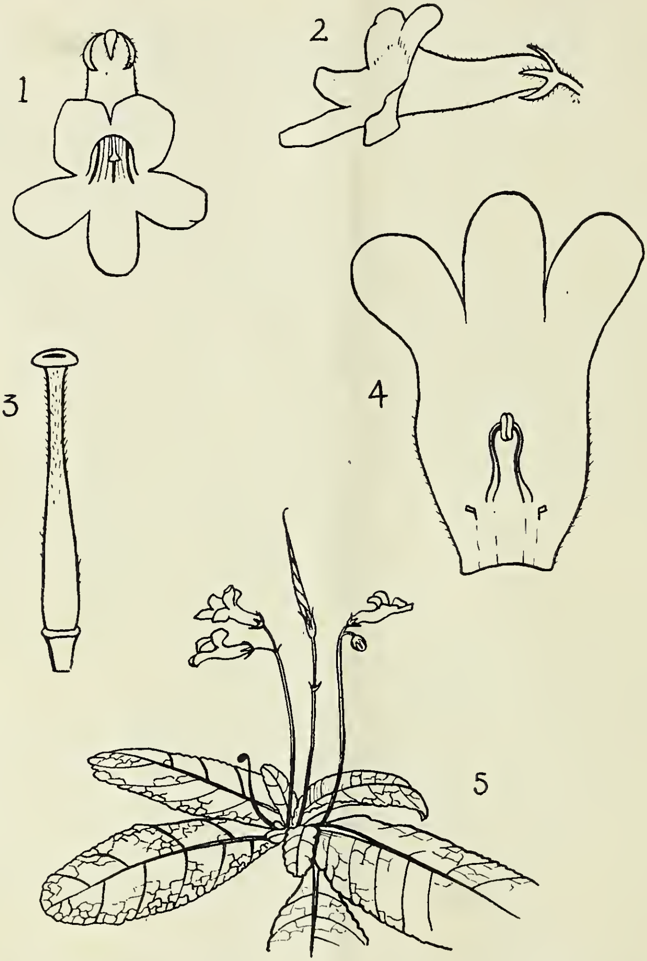

Fig. 4. *Streptocarpus modestus.* 1 and 2. Flowers × 1½. 3. Gynaecium and disc × 3. 4. Part of corolla with stamens and staminodes × 2¼. 5. Plant × about ⅜.